Comparisons of Job Characteristics

Focus Occupation: Industrial Engineers (17-2112)
Associated Occupation: Petroleum Engineers (17-2171)

Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 67

Focus Occupation: Industrial Engineers (17-2112)
Associated Occupation: Petroleum Engineers (17-2171)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Engineering and Technology	5.7	22.0	18.0	<<	Extensive education and/or training may be required
Mathematics	9.2	17.4	15.6	<	Expanded education and/or training may be required
Physics	4.3	15.3	8.5	<<	Extensive education and/or training may be required
Computers and Electronics	8.4	14.2	11.6	<	Expanded education and/or training may be required
Administration and Management	8.4	12.9	11.4	<	Expanded education and/or training may be required
Chemistry	4.8	11.6	7.6	<<	Extensive education and/or training may be required
Economics and Accounting	4.4	11.2	4.6	<<	Extensive education and/or training may be required
Design	5.2	9.7	14.8	>>	Current knowledge level is likely more than sufficient
Geography	3.9	9.4	2.7	<<	Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 92

Focus Occupation: Industrial Engineers (17-2112)
Associated Occupation: Petroleum Engineers (17-2171)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Reading Comprehension	10.7	15.5	14.8	0	Current skill level may be sufficient

Complex Problem Solving	9.1	13.5	12.8	0	Current skill level may be sufficient
Writing	9.2	13.5	12.8	0	Current skill level may be sufficient
Monitoring	9.9	12.8	12.2	0	Current skill level may be sufficient
Coordination	9.1	12.0	9.8	<	A higher skill level may be required
Time Management	8.9	11.8	9.8	<	A higher skill level may be required
Systems Evaluation	6.4	11.6	9.5	<	A higher skill level may be required
Systems Analysis	6.5	11.5	9.9	<	A higher skill level may be required
Management of Personnel Resources	6.9	10.7	8.4	<	A higher skill level may be required
Science	4.5	10.5	3.7	<<	Extensive development of skills in this area may be required
Mathematics	6.2	10.1	10.3	0	Current skill level may be sufficient
Negotiation	6.8	9.7	7.3	<<	Extensive development of skills in this area may be required
Management of Material Resources	3.7	7.3	7.2	0	Current skill level may be sufficient
Management of Financial Resources	3.3	7.1	6.0	<	A higher skill level may be required
Technology Design	2.6	5.4	4.4	<	A higher skill level may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 97

Focus Occupation: Industrial Engineers (17-2112)
Associated Occupation: Petroleum Engineers (17-2171)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Written Comprehension	11.0	15.7	14.6	0	Current ability level may be sufficient
Written Expression	9.8	14.8	14.1	0	Current ability level may be sufficient
Inductive Reasoning	10.2	14.2	12.8	<	Some improvement in abilities may be required
Problem Sensitivity	11.1	13.9	13.6	0	Current ability level may be sufficient
Information Ordering	9.9	12.9	11.8	0	Current ability level may be sufficient
Category Flexibility	9.0	12.6	10.7	<	Some improvement in abilities may be required
Mathematical Reasoning	6.3	11.7	10.5	<	Some improvement in abilities may be required
Fluency of Ideas	7.6	11.1	9.7	<	Some improvement in abilities may be required
Time Sharing	6.6	8.5	8.5	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 85

Focus Occupation: Industrial Engineers (17-2112)
Associated Occupation: Petroleum Engineers (17-2171)

Work Activities	Exclusivity of Activity
Advise clients regarding engineering problems	67
Analyze engineering design problems	69
Analyze scientific research data or investigative findings	27
Analyze technical data, designs, or preliminary specifications	47
Assign work to staff or employees	30
Calculate engineering specifications	64
Communicate technical information	4
Confer with engineering, technical or manufacturing personnel	25
Coordinate engineering project activities	71
Develop policies, procedures, methods, or standards	21
Direct personnel in support of engineering activities	74
Evaluate engineering data	60
Evaluate manufacturing or processing systems	68
Examine engineering documents for completeness or accuracy	62
Explain complex mathematical information	30
Improve test devices or techniques in manufacturing, industrial or engineering setting	75
Inspect facilities or equipment for regulatory compliance	51
Lead teams in engineering projects	73
Plan testing of engineering methods	72
Prepare safety reports	60
Prepare technical reports or related documentation	22
Read blueprints	10
Read technical drawings	7
Resolve engineering or science problems	46
Understand engineering data or reports	48
Use drafting or mechanical drawing techniques	50
Use hazardous materials information	35
Use library or online Internet research techniques	21
Use long or short term production planning techniques	74
Use mathematical or statistical methods to identify or analyze problems	30
Use project management techniques	47
Use scientific research methodology	21
Use technical regulations for engineering problems	61

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 86

Focus Occupation: Industrial Engineers (17-2112)
Associated Occupation: Petroleum Engineers (17-2171)

Tools and Technologies	Exclusivity
Business function specific software	1
Computers	1
Content authoring and editing software	1
Industry specific software	1

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.